

IN THE CLAIMS:

1. An apparatus for the purification of water comprising:

a non-solid vessel 3 having a bottom defining an opening, the vessel 3 capable of
5 being partially submerged below the surface 13 of a body of water;

a pan 5 located within the vessel 3, the pan 5 being flexibly connected to the inner
wall 19 of the vessel 3 and being located beneath the surface 13 of the water;

a lens 1 fixably connected to the top of the vessel 3, wherein the lens 1 is focused
beneath the surface 13 of the water and above the surface of the pan 5.

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2. The apparatus of claim 1, wherein the non-solid vessel 3 has an inner wall
19 and an outer wall 20.

15 3. The apparatus of claim 1, wherein a grill 10 is attached to the opening of
the bottom of the non-solid vessel 3.

4. An apparatus for the desalination or purification of water comprising:

a non-solid vessel 3 having a bottom defining an opening, the vessel 3 capable of
being partially submerged below the surface 13 of a body of water;

20 a pan 5 located within the vessel 3, the pan 5 being flexibly connected to the inner
wall 19 of the vessel 3 and being located beneath the surface 13 of the water;

a lens 1 fixably connected to the top of the vessel 3, wherein the lens 1 is focused
beneath the surface 13 of the water and above the surface 13 of the pan 5;

25 means for varying the orientation of the vessel 3 in accordance with the location
of the sun; and

means for condensing steam generated in the non-solid vessel 3, whereby steam
generated in the non-solid vessel 3 is condensed outside of the non-solid vessel 3.

30 5. The apparatus for the desalination of water of claim 4, wherein the means
for varying the orientation of the vessel 3 includes a sensing array 2, and electrical
controller, and a series of trim tanks 4 around the outer periphery of the non-solid vessel

3.

6. The apparatus for the desalination of water of claim 4, wherein the means for varying the orientation of the vessel 3 includes a sensing array 2, an electrical controller, and a gimbal joint.

7. The apparatus for the desalination of water of claim 4, wherein the means for condensing steam is a condensation coil 8 connected to the outer wall 20 of vessel 3 by piping 15.

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8. The apparatus for the desalination of water of claim 4 further comprising a turbine 7 connected to the vessel 3 for generating electricity.

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9. The apparatus of claim 4 further comprising a grill 10 fixably connected to the bottom of the vessel 3.

10. The apparatus of claim 4 further comprising a pump 9 fixably connected to the condensation coil 8.

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11. The apparatus of claim 4, further comprising an anchor 12 fixably connected to the bottom of the vessel 3.

12. The apparatus of claim 4, further comprising an exhaust turbine 7 connected to pressure valve 6.

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13. A method for the desalination or purification of water using sunlight, the method comprising the steps of:

containing a body of water within a vessel 3, the vessel 3 having a lens 1 fixably attached at the top and a bottom defining an opening,

5 locating a pan 5 just below the surface of the water,

focusing the lens 1 just beneath the surface 13 of the water and just above the bottom surface of the pan 5;

condensing water vapor outside of the vessel 3;

re-filling the vessel 3 with water as the water is converted to steam; and

10 periodically re-orienting the vessel 3 in a manner that tracks that movement of the sun.

14. The method of claim 10 further comprising generating electricity using the water vapor generated.

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15. The method of claim 10 further comprising pumping the purified water to a water storage container.